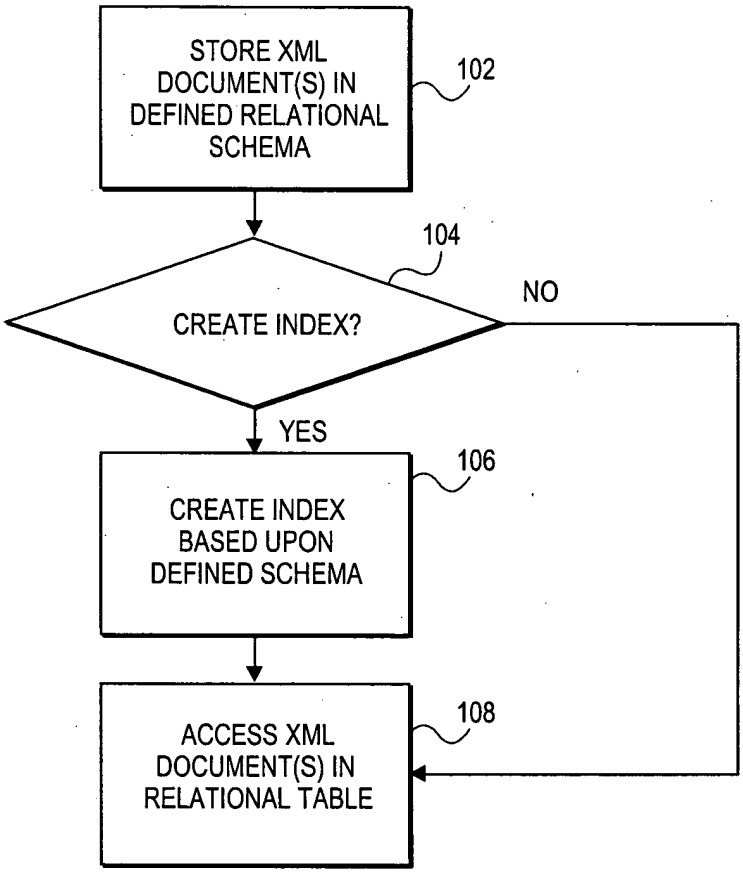

STORE XML DOCUMENT(S) IN DEFINED RELATIONAL SCHEMA
102
104
CREATE INDEX?
NO
YES
106
CREATE INDEX BASED UPON DEFINED SCHEMA
108
ACCESS XML DOCUMENT(S) IN RELATIONAL TABLE

FIG. 1

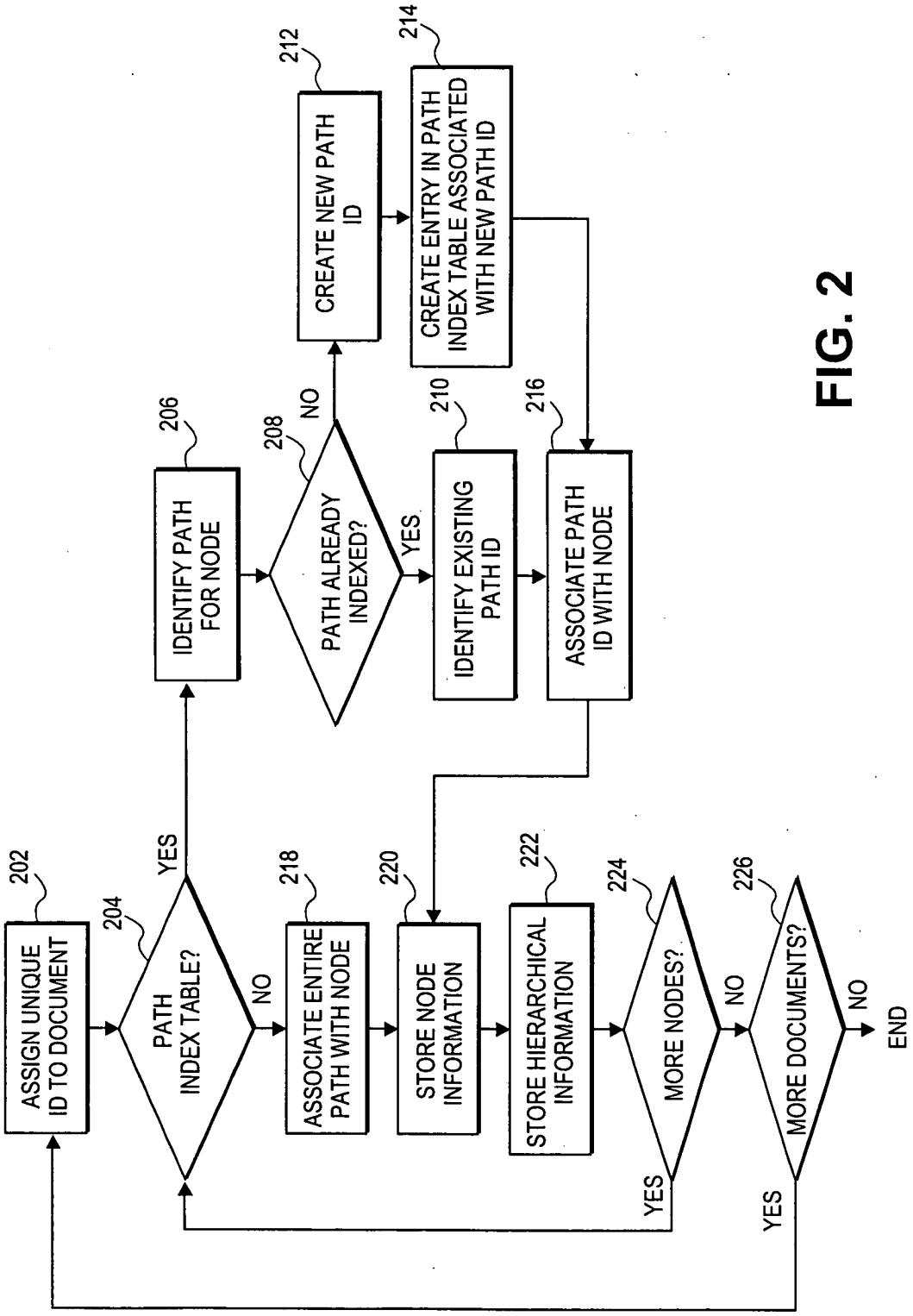

202
ASSIGN UNIQUE ID TO DOCUMENT
204
PATH INDEX TABLE?
YES
NO
206
IDENTIFY PATH FOR NODE
208
PATH ALREADY INDEXED?
NO
YES
210
IDENTIFY EXISTING PATH ID
212
CREATE NEW PATH ID
214
CREATE ENTRY IN PATH INDEX TABLE ASSOCIATED WITH NEW PATH ID
216
ASSOCIATE PATH ID WITH NODE
218
ASSOCIATE ENTIRE PATH WITH NODE
220
STORE NODE INFORMATION
222
STORE HIERARCHICAL INFORMATION
224
MORE NODES?
YES
NO
226
MORE DOCUMENTS?
YES
NO
END

FIG. 2

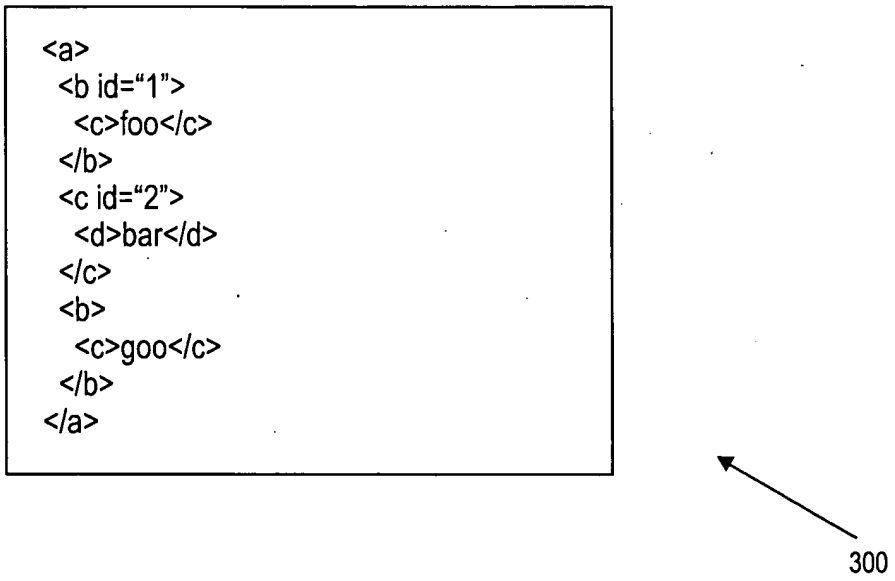
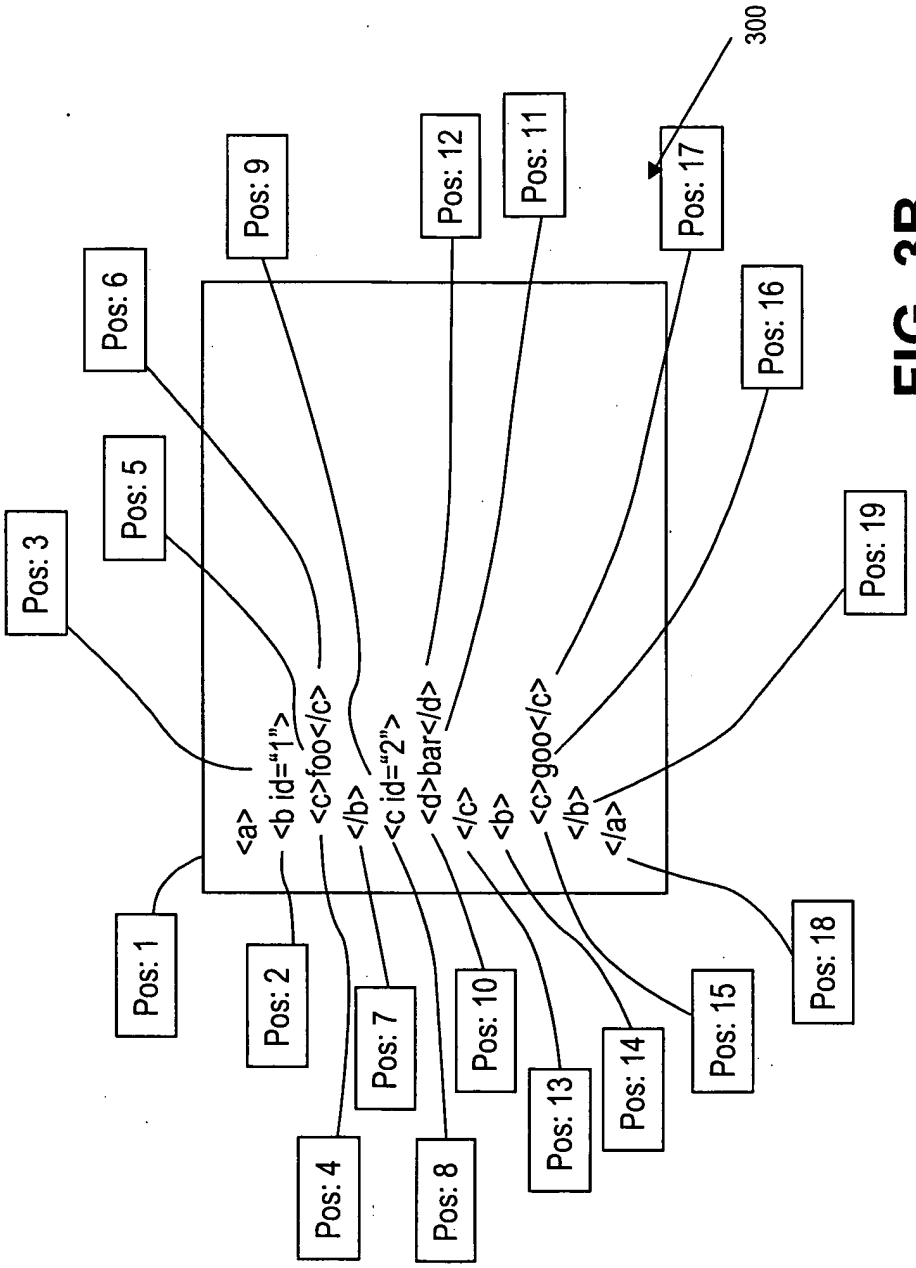


FIG. 3A


300
<a>

<c>foo</c>

<c id="2">
<d>bar</d>
</c>

<c>goo</c>

Pos: 1
Pos: 2
Pos: 3
Pos: 4
Pos: 5
Pos: 6
Pos: 7
Pos: 8
Pos: 9
Pos: 10
Pos: 11
Pos: 12
Pos: 13
Pos: 14
Pos: 15
Pos: 16
Pos: 17
Pos: 18
Pos: 19

FIG. 3B

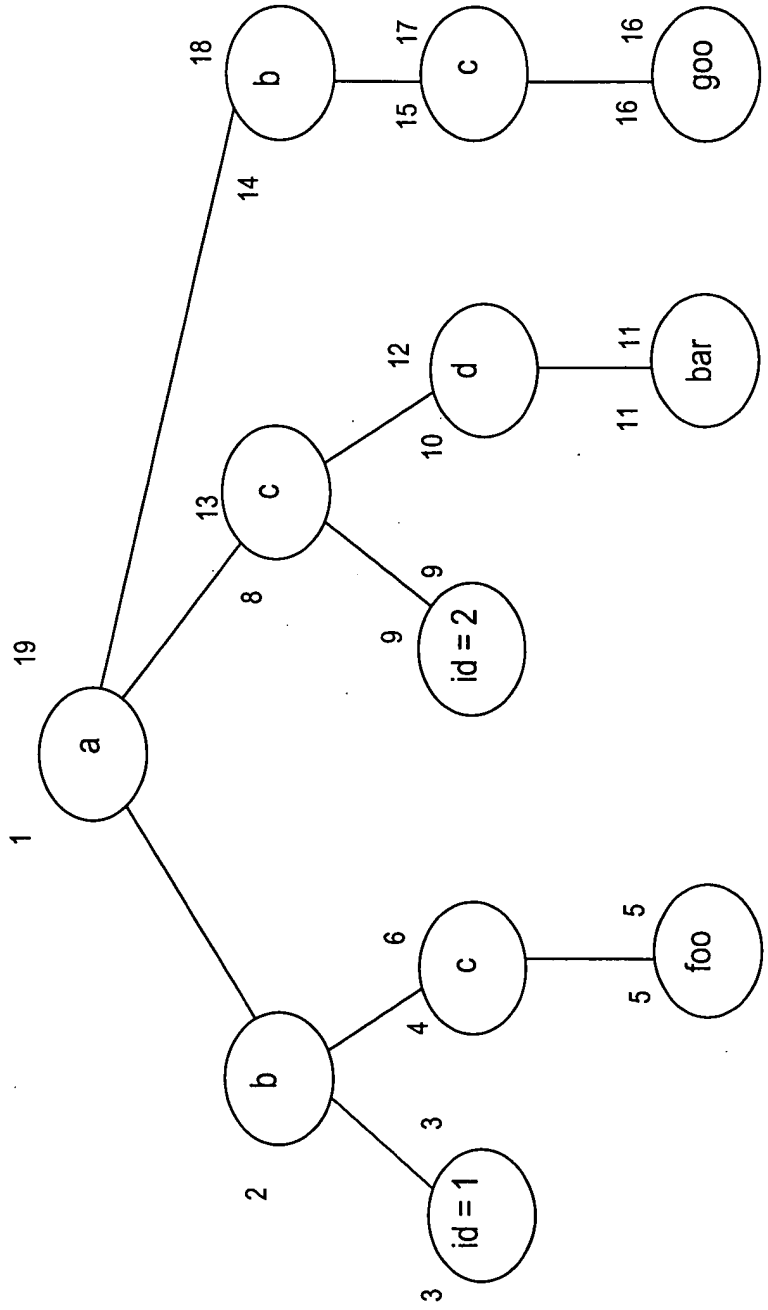

a
b
c
id = 1
b
c
d
id = 2
c
goo
bar
foo
1
19
2
3
3
4
5
6
5
8
9
9
10
11
11
12
13
14
15
16
16
17
18

FIG. 3C

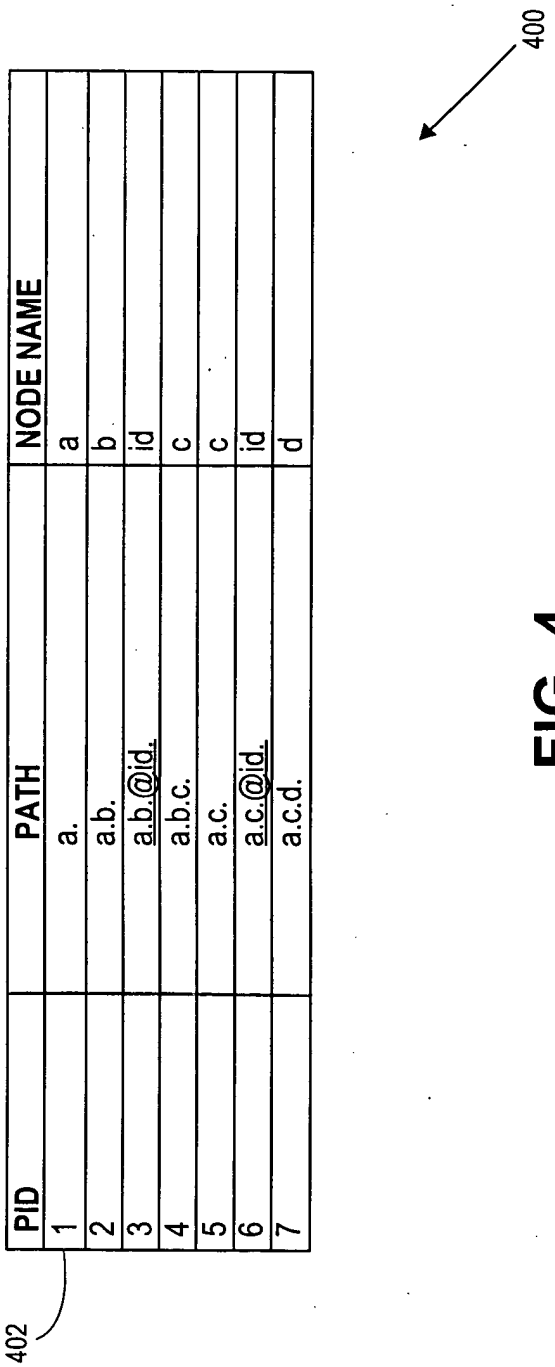
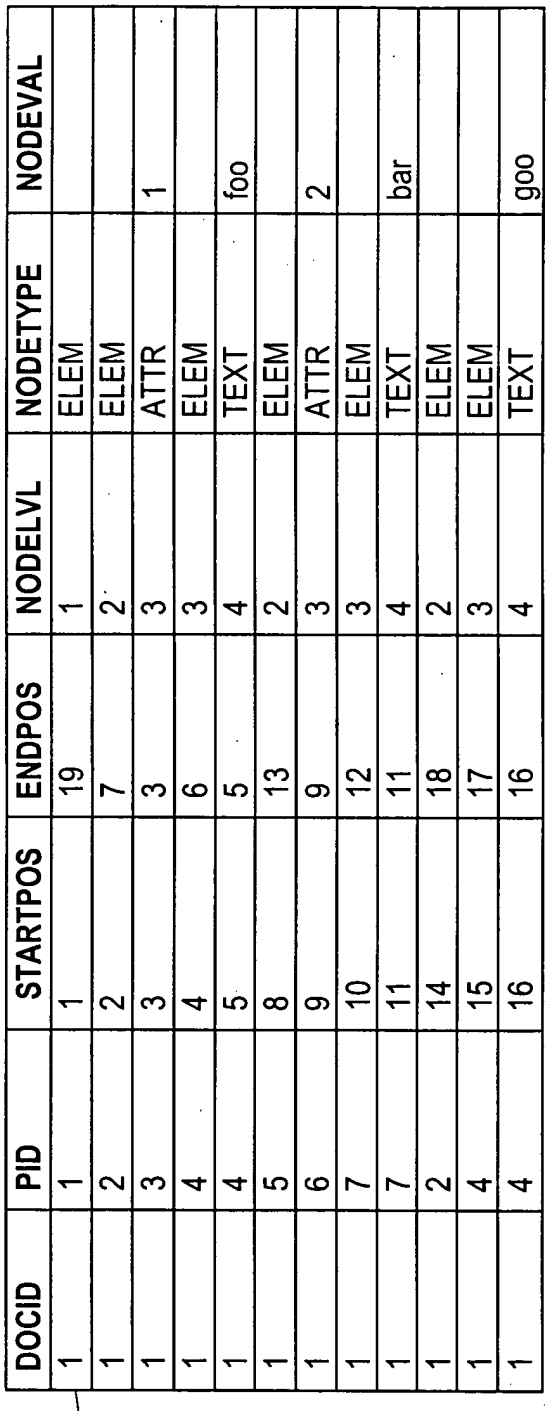

400
PID
PATH
NODE NAME
1
a.
a
2
a.b.
b
3
a.b.@id.
id
4
a.b.c.
c
5
a.c.
c
6
a.c.@id.
id
7
a.c.d.
d
402

FIG. 4



DOCID	PID	STARTPOS	ENDPOS	NODELVL	NODETYPE	NODEVAL
1	1	1	19	1	ELEM	
1	2	2	7	2	ELEM	
1	3	3	3	3	ATTR	1
1	4	4	6	3	ELEM	
1	4	5	5	4	TEXT	foo
1	5	8	13	2	ELEM	
1	6	9	9	3	ATTR	2
1	7	10	12	3	ELEM	
1	7	11	11	4	TEXT	bar
1	2	14	18	2	ELEM	
1	4	15	17	3	ELEM	
1	4	16	16	4	TEXT	goo

FIG. 5

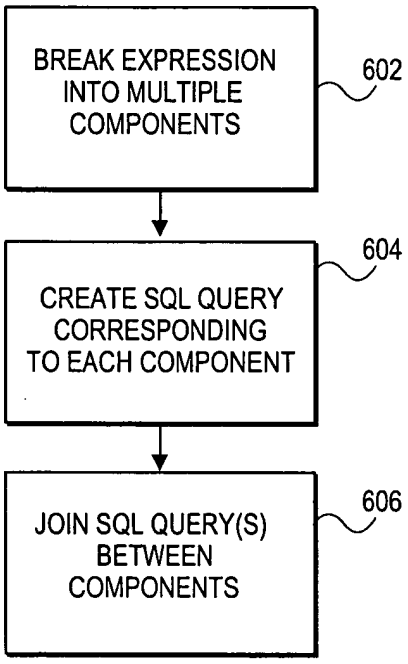

BREAK EXPRESSION INTO MULTIPLE COMPONENTS
602
CREATE SQL QUERY CORRESPONDING TO EACH COMPONENT
604
JOIN SQL QUERY(S) BETWEEN COMPONENTS
606

FIG. 6

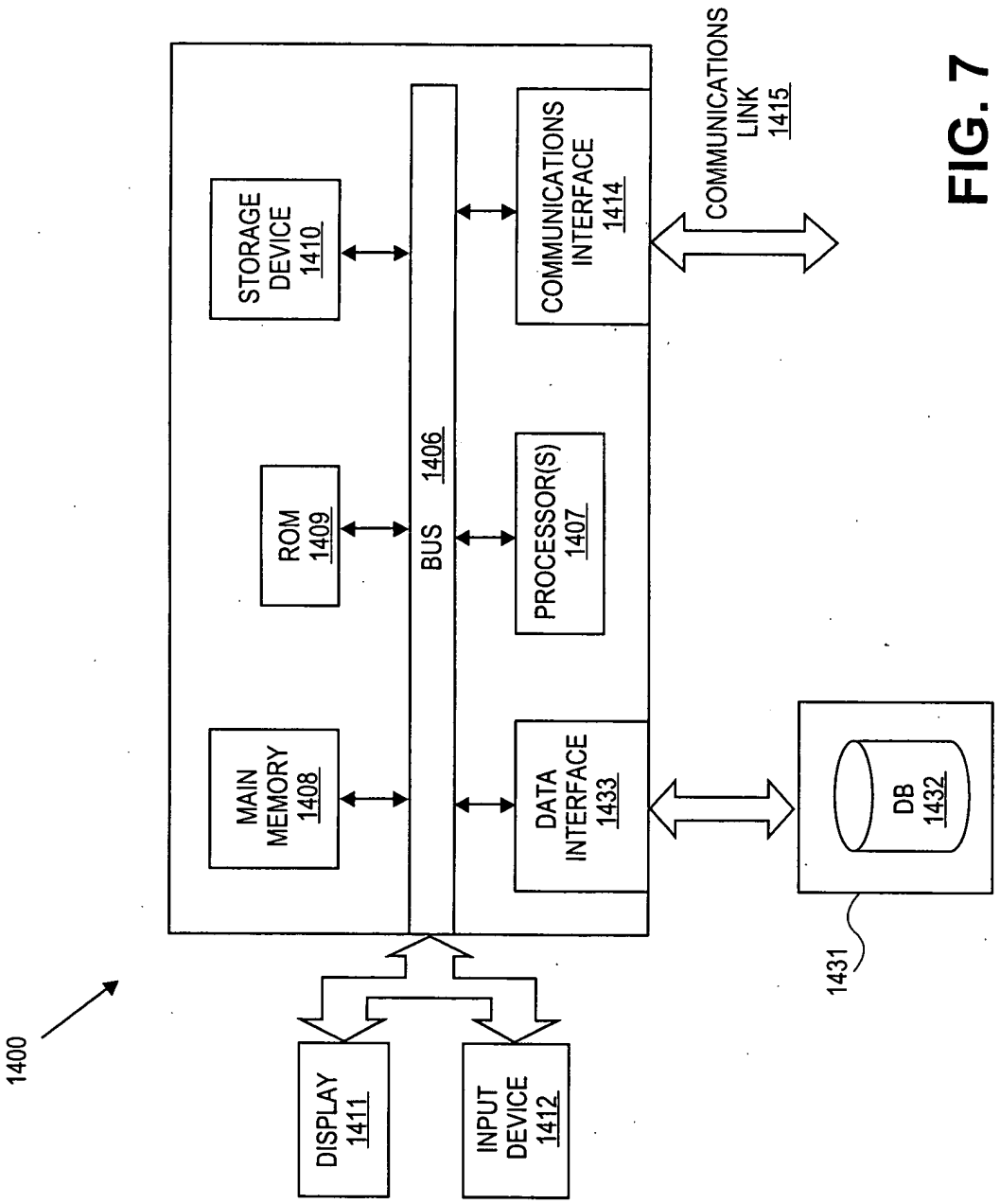

1400
STORAGE DEVICE 1410
ROM 1409
MAIN MEMORY 1408
BUS 1406
COMMUNICATIONS INTERFACE 1414
PROCESSOR(S) 1407
DATA INTERFACE 1433
COMMUNICATIONS LINK 1415
DB 1432
1431
DISPLAY 1411
INPUT DEVICE 1412

FIG. 7